

Singapore's 3G Licensing Framework  
**Technical and  
Policy Issues**

Press Conference  
20 October 2000

Catalyst for Change

# Number of Licences

- **4 Licences**

- Technical considerations

- UMTS Forum recommends that 2x15MHz + 5MHz per licensee is optimal to support high-bandwidth and full multimedia capability.

- Economic and market considerations

- Most countries have awarded 4 licences. Only larger markets e.g. UK, Germany, have awarded more.
- Singapore market can support 4 operators.

# 3G Licensing Worldwide

- **Auction**

- Germany [6]
- Netherlands [5]
- United Kingdom [5]
- Hong Kong [4]
- Switzerland [4]
- Australia

- **Beauty Contest**

- Finland [4]
- Japan [3]
- Spain [4]
- France [4]
- Ireland [4]
- South Korea [4]

# Licence Details

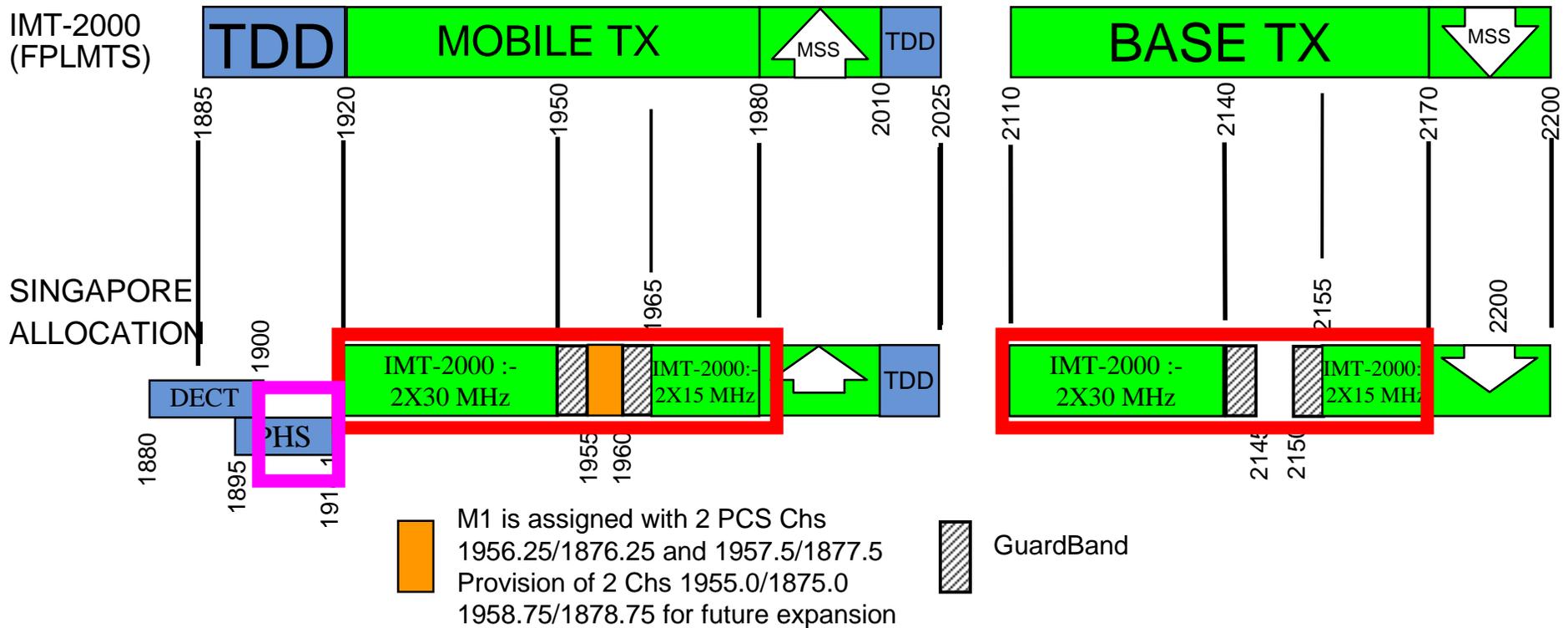
- **Technology**
  - ITU-endorsed IMT-2000 family
  - Operators may adopt any of above standards
- **Licence Period**
  - 20 years from date of award
- **Licence Conditions**
  - Conditions successful licensee must fulfil:  
e.g. 100% island-wide coverage, roll-out by 2003

# Spectrum Issues

- **Spectrum Bandwidth per Licence**
  - Each licensee gets equal amount of spectrum
  - 2x15 MHz paired spectrum
  - 5 MHz TDD unpaired spectrum
- **Additional 3G Spectrum**
  - ITU WRC-2000 approved additional spectrum requirements for IMT-2000
  - Likely to be available world-wide only around 2005

# Spectrum Issues

## Spectrum Band



## Proposed 3G Allocation :

1920-1980/2110-2170 (paired)

1900-1920 (unpaired)

# Spectrum Refarming

- **M1's cdmaOne Network**
  - M1's cdmaOne network currently uses 2.5Mhz of 3G spectrum
  - M1 will migrate its network by Dec 2001
- **PHS Spectrum**
  - Unpaired band 1895-1918.1MHz currently used for in-building cordless phone systems
  - Unlikely to cause interference with mobile 3G systems. IDA has worked with equipment suppliers to migrate the existing systems out of TDD band by 1Qtr 2001.

# Resale

- **Licence Transfer/Resale**
  - Transfer and resale of 3G licence will be allowed, subject to regulatory approval
- **Spectrum Trading and Resale**
  - Operators may trade or sell a portion of the spectrum, subject to regulatory approval

Market mechanism will help to correct any initial allocation inefficiency

# Open Network

- **Access among 3G Networks**
  - IDA will leave wholesale arrangement for access to 3G networks to commercial negotiations
  - Separating service provision from network operation (a) allows customers to access full variety of 3G services; (b) maximises utilisation of network/ fills excess capacity
  - IDA believes competition and business demands will encourage mobile virtual network operators to enter commercial arrangements to access 3G networks; IDA strongly supports this

# New Entrants

- **Reserving Licence for New Entrant**

- IDA will not reserve licences/spectrum for new entrants
- But IDA wants strong international bidders; their participation and presence important to Singapore's strategic objectives.

# New Entrants

- **National Roaming onto 2G Networks**

- If voice services are critical in the early stage, new 3G operator who is not an incumbent may need roaming onto 2G networks. This is required to achieve coverage in initial roll-out and to deploy services quickly.
- New 3G entrants are encouraged to make commercial arrangements for national roaming onto existing 2G networks
- In the event that commercial negotiations fail, IDA will mandate roaming at rates based on appropriate costing methodology

# Auction Details

- **Auction Format**

- Simultaneous Ascending (Multiple Round) Auction

- **Reserve Price**

- Low reserve price of S\$150 million
- Conservative estimate that is a discount from IDA's internal economic modelling of market-based reserve prices
- Low entry barrier for interested bidders; allow market mechanism to work

# Auction Details

- **Submission of Application**

- Potential bidders to submit\*:

- Bidding deposit
- Statement on technology they intend to use
- Application stating intent to bid with supporting info (this will be checked against ownership restrictions and minimal eligibility criteria, including financial viability and technical know-how)

- **Payment of Auction Fees**

- One-time up-front payment

\* Exact requirements will be advised by consultants to be appointed by IDA.

# Timeline

## Dec 2000

- Publication of Auction Rules
- Invitation to participate in the bid

## Feb 2001

- Deadline for submission of bids
- Conduct of 3G Auction
- Announcement of 3G Licensees

# 3G Press Conference Question & Answer Session

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